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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,840	12/07/2001	Kazuki Sakata	Q66840	7791

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SUGHRUE, MION, ZINN, MACPEAK & SEAS  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037

EXAMINER

THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/004,840

Applicant(s)

SAKATA ET AL.

Examiner

James A. Thompson

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see pages 2-3, filed 27 February 2006, with respect to the rejections of claims 1-6 under 35 USC §103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of newly discovered prior art.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbe (EP 0 934 851 A2) in view of Suzuki (US Patent 5,034,772).

Regarding claim 1: Zerbe discloses a sensor (figure 1(6) of Zerbe) in a car window (figure 1(1) of Zerbe) comprising a hood (figure 1(3) and column 3, lines 28-36 of Zerbe) partitioned in consort with a car window from a vehicle compartment area (column 3, lines 37-45 of Zerbe); and a sensor main body (figure 1(7) of Zerbe) that includes a lens (figure 1(9) of Zerbe) projecting within the hood (column 3, lines 53-58 of Zerbe) and detects, through the lens, an object to be detected

Art Unit: 2625

that is located in the front thereof (column 3, lines 37-43 of Zerbe). The various objects recorded such that the operation of the automobile is optimized (column 3, lines 37-43 of Zerbe) are the detected objects. In order for any type of optimization to occur, it is inherent that some form of detection of what is recorded be performed. Otherwise, the recording is simply a recording, with no resultant operations based on the recorded image data. The original text of the cited portions of Zerbe along with a translation of said cited portions follows:

**[column 3, lines 28-36 of Zerbe]**

German: Aus Fig. 1 is stark vereinfacht der Bereich des Übergangs einer Windschutzscheibe 1 in den Dachbereich 2 eines Kraftfahrzeugs ersichtlich. In diesem Bereich ist ein Leuchten-Sensor-Modul angeordnet, an dessen Gehäuse 3 auch ein Innerrückspiegel 4 befestigt ist. In dem genannten Modul sind eine Innenraum-leuchte 5 und eine optische Sensorvorrichtung 6 angeordnet und es können weitere Elemente wie Lesespots, Lautsprecher, Mikro-fone, ... untergebracht sein.

English: In Fig. 1 is a strongly oversimplified depiction of the area in front of the windshield 1 in the area of the roof 2 of the automobile can be seen. In this area the luminance-sensor-module is arranged, and its housing 3 and the rearview mirror 4 is mounted. Under this condition of the module, the inside lamp 5 and the optical direction sensor 6 are arranged, and other elements such as a loudspeaker, a microphone, et cetera are housed.

**[column 3, lines 37-45 of Zerbe]**

German: Die optische Sensorvorrichtung 6 dient zur Aufnahme von Bildinformationen aus der Umgebung des Kraftfahrzeugs, wobei die Erlangung von Informationen aus dem unmittelbaren Nahfeld der Windschutzscheibe 1 als auch dem Fernbereich vor dem Kraftfahrzeugs, für die Optimierung der Fahrzeugbetriebsweise von Belang sind. Die Sensorvorrichtung 6 ist, wie bekannt, vor Umwelteinflüssen geschützt hinter der Scheibe 1 im Innenraum des Kraftfahrzeugs angeordnet.

English: The optical direction sensor 6 serves to make a record of picture information of the surrounding area of the automobile, whereby the information of the near-field proximity

Art Unit: 2625

of the windshield 1 as well as the far region of the automobile is acquired, which is of importance for the optimization of the automobile operational mode. The direction sensor 6 is arranged so that it is sheltered behind the windshield 1 in the inside room of the automobile so that the environmental impact can be known.

**[column 3, lines 53-58 of Zerbe]**

German: Die Windschutzscheibe 1 ist im Durchtrittsbereich des auf die Optik 8 gerichteten Lichtes mit einer Schicht 9 variabler Lichtdurchlässigkeit versehen. Derartige Beschichtungen sind an sich bekannt, jedoch nicht lokal deutlich begrenzt in Windschutzscheiben 1 integriert worden, um eine Sensorvorrichtung 6 zu vereinfachen.

English: The windshield 1 is in the projection region of the light sources directed by the optics 8 with layers 9 of material with variable light permeability provided. Such layering is known, yet can be integrated with and confined in the windshield 1 around the direction sensor 6 for simplification, without being locally obvious.

**[column 3, lines 37-43 of Zerbe]**

German: Die optische Sensorvorrichtung 6 dient zur Aufnahme von Bildinformationen aus der Umgebung des Kraftfahrzeugs, wobei die Erlangung von Informationen aus dem unmittelbaren Nahfeld der Windschutzscheibe 1 als auch dem Fernbereich vor dem Kraftfahrzeug, für die Optimierung der Fahrzeugbetriebsweise von Belang sind.

English: The optical direction sensor 6 serves to make a record of picture information of the surrounding area of the automobile, whereby the information of the near-field proximity of the windshield 1 as well as the far region of the automobile is acquired, which is of importance for the optimization of the automobile operational mode.

Zerbe does not disclose expressly that a breathable dustproof filter is provided on a part of the hood.

Suzuki discloses providing a breathable dustproof filter as part of a sensor arrangement (column 3, lines 42-47 of Suzuki).

Zerbe is analogous art because Zerbe and the present application are from the same field of endeavor, namely optical sensors contained within an automobile which detect objects

Art Unit: 2625

outside the automobile. Zerbe and Suzuki are combinable because they are from similar problem solving areas, namely the protection of electronic sensors. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide a breathable dustproof filter as part of a sensor arrangement, as taught by Suzuki. Since the sensor taught by Zerbe projects within the hood and the sensor electronics are contained within the hood, said breathable dustproof filter would be provided on a part of the hood. The motivation for doing so would have been to keep the sensor clean, and thus allow the sensor to function better, which is clearly an obvious and desirable result. Furthermore, the desirability of protecting the sensors and optics from dust and other environmental problems associated with the interior of the automobile is clearly recognized in Zerbe (column 3, lines 45-50 of Zerbe). The original text of the cited portions of Zerbe along with a translation of said cited portions is given below. Therefore, it would have been obvious to combine Suzuki with Zerbe to obtain the invention as specified in claim 1.

**[column 3, lines 45-50 of Zerbe]**

German: Darüber hinaus ist jedoch ein Gehäuse 7 der Sensorvorrichtung 6 direkt dichtend an die Windschutzscheibe 1 angesetzt, so daß eine Sensor-Optik 8 auch vor negativen Einflüssen in Kraftfahrzeuginnerraum (Staub, etc.) geschützt ist.

English: However, the area of the housing 7 of the direction sensor 6 is arranged such that it is sealed up at the windshield 1, so that the sensor optics 8 do not experience the negative influence of the inner area of the automobile (dust, etc.).

Art Unit: 2625

**Further regarding claim 2:** Suzuki discloses that said breathable dustproof filter is used to cover the sensors which are mounted on a printed circuit board (figure 4A(20) and column 3, lines 44-47 of Suzuki). The construction of said filter, specifically the fact that said filter is designed to cover the sensors while only the sensors themselves are mounted on the printed circuit board, demonstrates that said filter is detachably installed. Furthermore, it is inherent that a filter would be detachably installed since, if the filter were not detachable, it would be impossible to replace or wash the filter. As is well-known in the art, a filter must be replaced or washed - depending on the type of filter involved - when a certain level of dust and residue has accumulated. This is not possible if the filter is not detachably installed. If one were to fixedly install a filter such that said filter is not detachable, the functionality of said filter would be defeated. In the context of the sensor in a car window taught by Zerbe, said filter would be installed to a part of the hood since the lens of said sensor projects within the hood.

**Regarding claim 5:** It is implicit in the disclosure of Zerbe that the visual field of the lens coincides with the wiping range of a wiper provided on the front surface of the car window. A wiper is a standard piece of equipment for an automobile, without which an automobile would be deemed unsafe and unsuited for human operation. Furthermore, as can clearly be seen in figure 1 of Zerbe, the sensor optics (figure 1(8) of Zerbe) are above the region of the windshield, but close to the region of the windshield, corresponding to where the rear-view mirror (figure 1(4) of Zerbe) is attached. This is generally at the upper area of the wiping range of the wiper. Furthermore,

Art Unit: 2625

one of ordinary skill in the art at the time of the invention would necessarily set the visual field of the lens such that said visual field coincides with the wiping range of the wiper. Otherwise, the sensor would be unable to properly function and record visual images.

**Regarding claim 6:** Zerbe discloses that the sensor main body (figure 1(7) of Zerbe) is a camera main body (column 3, lines 45-50 of Zerbe). The sensor main body (figure 1(7) of Zerbe) is arranged such that the entire sensor is sealed up against the environmental affects of the automobile, such as dust (column 3, lines 45-50 of Zerbe). Inside the housing includes elements such as the sensor optics (figure 1(8) of Zerbe). Thus, the sensor main body is a camera main body since said sensor main body includes the optics and all the other bits that go along with the sensor optics for recording the image information around the automobile. The original text of the cited portions of Zerbe along with a translation of said cited portions follows:

**[column 3, lines 45-50 of Zerbe]**

German: Darüber hinaus ist jedoch ein Gehäuse 7 der Sensorvorrichtung 6 direkt dichtend an die Windschutzscheibe 1 angesetzt, so daß eine Sensor-Optik 8 auch vor negativen Einflüssen in Kraftfahrzeuginnerraum (Staub, etc.) geschützt ist.

English: However, the area of the housing 7 of the direction sensor 6 is arranged such that it is sealed up at the windshield 1, so that the sensor optics 8 do not experience the negative influence of the inner area of the automobile (dust, etc.).



Art Unit: 2625

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbe (EP 0 934 851 A2) in view of Suzuki (US Patent 5,034,772) and Fujii (US Patent 5,922,105).

Regarding claim 3: Zerbe in view of Suzuki does not disclose expressly that said breathable dustproof filter is a HEPA filter.

Fujii discloses a breathable dustproof filter that is a HEPA filter (column 3, lines 24-26 of Fujii).

Zerbe in view of Suzuki is combinable with Fujii because they are from similar problem solving areas, namely the removal of particulate matter from sensitive equipment. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a HEPA filter, as taught by Fujii. The motivation for doing so would have been that HEPA filters are both convenient and effective (column 3, lines 24-26 of Fujii). Therefore, it would have been obvious to combine Fujii with Zerbe in view of Suzuki to obtain the invention as specified in claim 3.

Regarding claim 4: Zerbe in view of Suzuki does not disclose expressly that said breathable dustproof filter is an ULPA filter.

Fujii discloses a breathable dustproof filter that is an ULPA filter (column 3, lines 24-26 of Fujii).

Zerbe in view of Suzuki is combinable with Fujii because they are from similar problem solving areas, namely the removal of particulate matter from sensitive equipment. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use an ULPA filter, as taught by Fujii. The motivation for doing so would have been that ULPA filters are both convenient and effective (column 3,

Art Unit: 2625

lines 24-26 of Fujii). Therefore, it would have been obvious to combine Fujii with Zerbe in view of Suzuki to obtain the invention as specified in claim 4.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbe (EP 0 934 851 A2) in view of Suzuki (US Patent 5,034,772) and obvious engineering design choice.

Regarding claim 5: It is implicit in the disclosure of Zerbe that the visual field of the lens coincides with the wiping range of a wiper provided on the front surface of the car window. A wiper is a standard piece of equipment for an automobile, without which an automobile would be deemed unsafe and unsuited for human operation. Furthermore, as can clearly be seen in figure 1 of Zerbe, the sensor optics (figure 1(8) of Zerbe) are above the region of the windshield, but close to the region of the windshield, corresponding to where the rear-view mirror (figure 1(4) of Zerbe) is attached. This is generally at the upper area of the wiping range of the wiper. Furthermore, one of ordinary skill in the art at the time of the invention would necessarily set the visual field of the lens such that said visual field coincides with the wiping range of the wiper. Otherwise, the sensor would be unable to properly function and record visual images.

However, even if *arguendo* it were not implicit in the disclosure of Zerbe that the visual field of the lens coincides with the wiping range of a wiper provided on the front surface of the car window, it would have been an obvious engineering design choice to set the visual field of the lens such that said visual field coincides with the wiping range of the wiper. The ability of the sensor to properly function and record visual

Art Unit: 2625

images is clearly important. Thus, one of ordinary skill in the art at the time of the invention would be motivated to set the visual field of the lens such that said visual field coincides with the wiping range of the wiper since doing so would allow the sensor to function properly and accurately record visual images when rain occurs.

### **Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bernd Zerbe, DE 198 05 000 A1, Published 12 August 1999.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



20 April 2006

James A. Thompson  
Examiner  
Technology Division 2625



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